

PPS, Portable Pumping System

Spec Sheet

Suitable for a single Inert gas, Oxygen or multiple gases, the CryoVation PPS is a great choice when your volume does not demand a large cylinder filling operation or if you need to fill from a small VGL/dewer or micro bulk liquid source. Sometimes a PPS is preferred when you need to fill inert gases to 4500 (300 Bar) or 6000 (400 Bar) PSI when you cannot do it on your industrial system.

The system comes with everything you need to start filling your own cylinders. Discover huge savings by filling your own medical or inert gases, control your own inventory! The system is also **expandable**, if you find yourself needing to fill from a bulk source, you can take everything on this system and apply it to a bulk source.



Features of the CryoVation PPS:

- Flow rate of 5000 SCFH (*equals a fill time of 30 minutes for 100 "E" cylinders*). Larger sizes available
- Draws liquid from a standard liquid cylinder (45-gallon, 250 PSI; or larger)
- This system is *available with* our semi-automated "Fill-Free"  control console that will sense temperature, pressure and vacuum and allow you interface with a color touchscreen
- Pump is standard design with over 30 years of production
- Built-in safety features include over-pressure and under-temperature shut-off switches, high pressure safety relief valve and over-psi vacuum line safety relief
- Fills all size cylinders (*manifolds are sold separately*)
- Powered from a standard 240-volt power source (or 3 Phase hard wire)



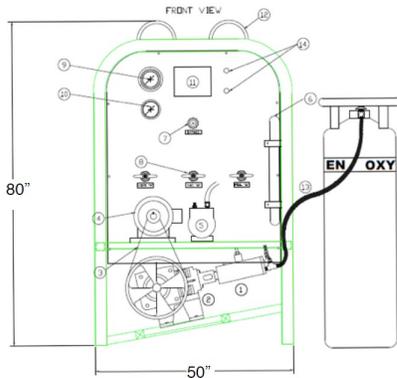
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Commonly sold for medical or industrial oxygen filling, the PPS can also be customized for nitrogen, argon, co2 and helium! We have also developed a blending version of this that will allow you to blend your 2-part industrial mixes.



Optional upgrade to Fill-Free, Semi Automated filling of



Comes with:

- Cryogenic pump
- Vacuum pump
- Fill Controls
- Vaporizer (2,500, 5,000 or 10,000)
- Automation is optional
- Valves, gauges and safeties (relief, pressure and under-temp)

Medical Oxygen FDA Starter Kit & Parts

Spec Sheet



Regulators, fittings and hoses needed to calibrate analyzer and analyze CGA 540 and 870 style cylinders. *Calibration gases not included*

Gauge Recalibrations & Recertification

Having to send your gauges out is a pain, CryoVation makes it easy with a flat rate and quick turnaround! The process is easy, send us your gauges with a PO or call ahead with a PO, when the gauges come in we process them and ship them back quickly.



- Gauges certified by CryoVation are traceable to N.I.S.T.
- CryoVation certification and oxygen cleaning practices meet FDA requirements used for filling Medical Grade
- According to the CGMP (Current Good Manufacturing Practices), the pressure and vacuum gauges as well as thermometer used for filling Medical Grade
- Oxygen must have annual recalibration by a certified NIST traceable gauge
- CryoVation provides customers with required documentation

On-Site Compliance Service

Personal, on-site compliance training by CryoVation's FDA consultant. Includes personalized SOP manual and 2 days on site.

Medical Q & A

Spec Sheet

Q: How many "E" Cylinders can I fill at a time?

A: As many as you have manifolding for; there is no limit. The more you fill at a time, the more cost effective and efficient your filling will become. The PPS-2500 will fill 50 E Cylinders per 30 minutes. The PPS-5000 will fill 100 E Cylinders per 30 minutes.

Q: How many E-cylinders can I fill with a standard liquid can?

A: A standard liquid can (45 gallons, 250 psi) will fill approximately 150-200 E Cylinders. (Variables can affect this figure)

Q: What size cylinders can the CryoVation system fill?

A: The CryoVation system is designed to fill all size medical oxygen cylinders. Most portable medical cylinders have a CGA-870 valve, but some, like the grab-n-go, have a CGA-540 valve. We have several different fill racks to choose from.

Q: What are the power requirements for the CryoVation medical oxygen filling system?

A: Our system can run on any power source; please let us know what you have at the time of purchase.

Q: How loud is the CryoVation filling system?

A: You can compare the sound of the pump (while pumping) to a pair of shoes in the dryer. It would be fine in a warehouse or stock room. You may not want it in your office.

Q: How much space does the system occupy?

A: This is contingent on the type of racks you choose, but it generally fits into a 15-foot x 10- foot area.

Q: If my volumes increase, can we speed up the flow rate?

A: Yes, the CryoVation system can be upgraded by adding additional vaporizer capacity and, if needed, speeding up the existing pump.

Q: What is the installation expense?

A: We will either use a local service rep or provide one of our in-house technicians to install and train you on the operation of the equipment. This usually takes a few days. Our installations also include materials such as vent tubing, silencer, anchors, compression fittings, pipe clamps, vacuum venting, and drip pan with drain, etc.

Q: Are there FDA requirements I must meet to fill my own cylinders?

A: Yes, because oxygen is considered a drug, the FDA has specific regulations for medical oxygen filling companies. CryoVation offers on-site FDA compliance training to keep you current on FDA regulations and help ensure you will be in full compliance during an FDA inspection. You may also opt to do your own training and we can provide the custom SOP manual and Validation protocol.